

Application No. 10/607,758
Reply to Office Action mailed May 17, 2005

REMARKS

The present Amendment is in response to the Examiner's Office Action mailed May 17, 2005 (the "Office Action"). Claims 1-20 and 27 were pending. Claims 4 and 10 are cancelled, and claims 5, 11, and 27 are amended. Claims 1-3, 5-9, 11-20, and 27 are now pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicants' remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants' understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

I. PRIOR ART REJECTIONS

A. Rejection Under 35 U.S.C. §102

The Office Action rejects claims 4, 5, and 10 under 35 U.S.C. §102(b) as being unpatentable over United States Patent No. 5,115,441 to Kopf, *et al.* In response, Applicants note that claims 4 and 10 have been cancelled by this paper, making the rejection moot. With

Application No. 10/607,758
Reply to Office Action mailed May 17, 2005

respect to claim 5, Applicants note that this claim has been rewritten to depend on claim 11. Claim 11, as will be discussed below, has been rewritten in independent form by Applicants and is now considered to be allowable. As such, claim 5 is also allowable. Accordingly, Applicants request removal of the rejection to claim 5 under Section 102.

The Office Action also rejects claim 27 under Section 102(b) as being unpatentable over United States Patent No. 6,160,834 to Scott ("*Scott*"). However, *Scott* -- assuming *arguendo* that it and the other references cited herein qualify as prior art -- fails to teach each and every element of the pending claims, and thus is not an anticipatory reference.

In particular, Applicants submit that the claimed invention is substantially distinct from the VCSEL device taught by *Scott*. In particular, independent claim 27 requires, in a vertical cavity surface emitting laser, the presence of first and second mirrors, and "a thermally conductive structure *arranged for thermal communication* with a portion of at least one of: the first mirror; and, the second mirror." *Scott* fails to teach such a VCSEL device, notwithstanding assertions to the contrary purported in the Office Action. In particular, the Office Action alleges that a variable tuning layer 10 and/or a probe pad metallization 34, shown in Figure 1 of *Scott*, teach the thermally conductive structure required in claim 27. However, Applicants note that neither of these structures is taught by *Scott* as being thermally conductive or arranged for thermal communication with a portion of *Scott*'s mirrors 14 or 18. In fact, the disclosure of *Scott* neither mentions nor discusses heat or thermal aspects of its VCSEL. *Scott* instead discloses the variable tuning layer 10 as "preferably disposed on the conventional VCSEL structure 5 *to tune the slope efficiency* and thereby compensate for manufacturing variations." Col. 4, ll. 23-26 (emphasis added). Similarly, *Scott* discloses the purpose of the probe pad metallization 34 as

Application No. 10/607,758
Reply to Office Action mailed May 17, 2005

"preferably disposed onto the p ohmic contact 32 *to provide for wire bonding and electrical testing.*" Col. 4, ll. 19-21 (emphasis added). It is thus seen that neither structure above is arranged for thermal communication with either of the VCSEL mirrors of *Scott*, but rather has a distinct purpose unrelated to thermal communication according to *Scott's* corresponding disclosure.

Consequently, *Scott* fails to disclose a thermally conductive structure for its VCSEL and therefore fails to teach or suggest each and every element of independent claim 27. *Scott* thus cannot be used to anticipate the present invention. Applicants therefore respectfully submit that this claim is patentably distinct and request that the Section 102 rejection in view of *Scott* be withdrawn.

B. Rejections Under 35 U.S.C. § 103

The Office Action rejects claims 6-9 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,115,441 to Kopf, *et al.* in view of U.S. Patent No. 6,493,366 to Johnson, *et al.* With respect to this rejection, Applicants note that each of the above rejected claims were previously dependent on claim 4, which is now cancelled pursuant this paper. Claims 6-9 have been rewritten as needed to depend on claim 11, which Applicants submit is allowable for at least the reasons to be discussed below. As such, Applicants submit that claims 6-9 are now allowable and respectfully solicit the removal of the rejection to these claims under Section 103.

Application No. 10/607,758
Reply to Office Action mailed May 17, 2005

III. Allowable Subject Matter

Applicants thank the Examiner for allowance of claims 1-3 and 12-20.

Applicants submit the following comments regarding the Examiner's statements of reasons for the indication of allowable subject matter in the Office Action. Applicants agree with the Examiner that the claimed invention of claim 15 is patentable over prior art, but respectfully disagree with the Examiner's statement of reasons for allowance as set forth in the Office Action. Applicants submit that it is the claim as a whole, rather than any particular limitation, that makes each of these claims allowable. No single limitation should be construed as the reason for allowance of a claim because it is each of the elements of the claim that makes it allowable. Therefore, Applicants do not concede that the reasons for allowable subject matter given by the Examiner are the only reasons that make, or would make, the claims allowable and does not make any admission or concession concerning the Examiner's statement in the Office Action.

The Office Action objects claim 11 as being dependent upon a rejected base claim, but states that the claim would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims. In response, Applicants have rewritten claim 11 to include all limitations of its base claim and any intervening claims. As such, Applicants submit that independent claim 11 is allowable as rewritten and respectfully solicit such allowance. In addition, claims 5-9 have been amended as necessary to ultimately depend upon claim 11, as mentioned above. These claims are therefore also allowable for at least the same reasons.

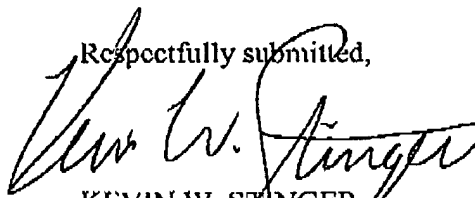
Application No. 10/607,758
Reply to Office Action mailed May 17, 2005

CONCLUSION

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 17th day of October, 2005.

Respectfully submitted,



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